Dear Colleagues,

Another academic year has gotten off to a great start, with ASU welcoming more than 100 new faculty members from a variety of disciplines.

The productivity and dedication of our faculty, students and researchers drive the success and impact of our enterprise. This impact is being recognized by prominent organizations nationwide. For example, Dr. Ariel Anbar in the School of Earth and Space Exploration was selected as ASU’s first Howard Hughes Medical Institute Professor for his pioneering research and teaching. Dr. Cynthia Hogue, in the Department of English, received a prestigious Literature Translation Fellowship from the National Endowment for the Arts.

The Biodesign Institute recently launched the new Center for Applied Structural Discovery, led by Dr. Petra Fromme, to examine molecular structures within cells, with potential applications ranging from bioenergy to drug discovery. The center will build on ASU’s previous breakthroughs in observing the reaction chemistry of proteins in real-time, using a novel technique called “time-resolved serial femtosecond X-ray crystallography.”

Our entrepreneurship efforts also enjoy continued success. The Women’s Entrepreneurship Initiative is a new ASU program that will support and advance women-led businesses. The initiative is one of only three university recipients of a grant from the Small Business Administration’s Growth Accelerator Fund.

Overall, our enterprise continues to expand. In fiscal year 2014 we saw an increase of more than 30% in the value of submitted proposals compared to the prior year, for a total of $1.68 billion. Our research expenditures reached a new high of $425 million, more than $20 million over the previous year.

This growth reflects your commitment to creative, collaborative, solution-focused research. For example, in June, ASU was awarded $20 million from the National Geospatial-Intelligence Agency to launch the Foresight Initiative, an interdisciplinary effort led by Nadya Bliss to explore the national security risks associated with climate change.

ASU has also been selected by NASA to design, deliver and oversee a pair of color panoramic zoom cameras for the 2020 Mars rover mission. ASU will receive more than $10 million of the funding to support the Mastcam-Z imaging investigation, led by Dr. Jim Bell in the School of Earth and Space Exploration.

This week, ASU is launching the International School of Biomedical Diagnostics in collaboration with Dublin City University. The school will draw on the deep expertise of our faculty in biomedicine, informatics, policy, engineering and business as well as the National Biomarker Development Alliance.

These are just a few of our many successes. More details are outlined in this Bulletin.

Thank you for your continued hard work!

Sincerely,

Sethuraman “Panch” Panchanathan
Senior Vice President of OKED
Advancing Research, Entrepreneurship & Economic Development
panch@asu.edu
Groundwork for Ebola treatment developed at ASU

Dr. Charlie Arntzen, founding director of the Biodesign Institute, laid the groundwork for an Ebola treatment administered to two American aid workers infected with the virus, both of whom survived. Arntzen’s research focuses on plant-based drug delivery systems. In the case of the Ebola drug, modified tobacco plants produced the targeted Ebola antibodies and were then purified and converted to small doses of the drug.

Learn more

First images of photosynthesis

An international research collaboration led by Dr. Petra Fromme, in the Department of Chemistry and Biochemistry, has resulted in the first images of photosynthesis in action. The team used extremely fast femtosecond X-ray crystallography to show water splitting into protons, electrons and oxygen. Capturing of the mechanisms of photosynthesis will pave the way for creating artificial systems that mimic or even improve upon the efficiency of the process. The results of the study were published in Nature.

Learn more

New understanding of chimpanzee behavior

A new study co-authored by Dr. Ian Gilby, in the School of Human Evolution and Social Change (SHESC), reveals that lethal aggression in chimpanzees is not the result of human impact, as previously thought. The study was published in the journal Nature, concurrent with a “News and Views” column written by SHESC professor Dr. Joan Silk, discussing the origins of human warfare and the search for understanding chimpanzee aggression.

Learn more
Mapping Mars

A heat-sensing camera designed by an ASU team provided data to create the most detailed global map of Martian surface properties to date. Dr. Phil Christensen, in the School of Earth and Space Exploration, led the team that developed the camera. Being able to identify surface properties of Mars allows scientists to ask and hopefully answer questions about the planet that were not previously possible.

Learn more

Artificial enzyme from DNA

Using molecules of DNA like an architectural scaffold, ASU scientists, in collaboration with colleagues at the University of Michigan, have developed a 3-D artificial enzyme cascade that mimics an important biochemical pathway that could prove important for future biomedical and energy applications. The study was led by Dr. Hao Yan, director of the Center for Molecular Design and Biomimicry at the Biodesign Institute, and published in the journal Nature Nanotechnology.

Learn more

Hacks 4 Humanities

Project Humanities partnered with EqualityTV to create and host Hacks 4 Humanities, a two-day, 36-hour event on September 20-21. During the event, participants worked in groups to create apps or other technology that supports social good. The event was part of the fall kickoff for Humanity 101, the 2014 Project Humanities initiative.

Learn more
Nature hails ASU paper as milestone

In July 1978, Dr. Peter Buseck, of ASU’s School of Earth and Space Exploration and Department of Chemistry and Biochemistry, published a paper on a new technique for high-resolution imaging of crystal structures using transmission electron microscopes. Recently, the journal Nature hailed that paper as a milestone in the science of crystallography. The Nature Milestones series highlights key discoveries that have shaped different scientific fields, and enables the wider recognition of classic findings that are often recognized only by those in the field.

Learn more

New insights about exploding stars

Dr. Sumner Starrfield, in the School of Earth and Space Exploration, is part of a research team that has dispelled the long-held notion that exploding stars cannot produce high-energy radiation. The team used the Large Area Telescope onboard NASA’s Fermi Gamma-ray Space Telescope to make the discovery and published their findings in a recent issue of Science.

Learn more

Seals and sea lions spread tuberculosis

New research shows that tuberculosis likely spread from humans in Africa to seals and sea lions that brought the disease to South America and transmitted it to people there before Europeans landed on the continent. The study was a collaboration between ASU and the University of Tubingen in Germany. Dr. Anne Stone, in the School of Human Evolution and Social Change, led ASU’s involvement in the study, which was published in Nature.

Learn more
The following are a sampling of ASU research accolades.

Dr. Janet Franklin, of the School of Geographic Sciences and Urban Planning, has been elected to the National Academy of Sciences. Franklin’s research is focused on the dynamics of terrestrial plant communities at the landscape scale.

Learn more

Dr. Vikram Kodibagkar, of the School of Biological and Health Systems Engineering, is the recipient of a Faculty Early Career Development (CAREER) Award from the National Science Foundation. He has been awarded funding for a project titled “Quantitative Imaging of Tissue Oxygenation.”

Learn more

Dr. Dr. Vladislav Vysotsky, in the School of Mathematical and Statistical Sciences, won a prestigious Marie Curie Actions International Incoming Fellowship from the European Commission. Vysotsky will complete his fellowship at the mathematics department of Imperial College London and will work with an expert in probability theory.

Learn more

Dr. Charlie Arntzen, the founding director of the Biodesign Institute and Regents’ Professor in the School of Life Sciences, has been named the 2014 Arizona Bioscience Researcher of the Year by the Arizona Bioindustry Association. Each year the award honors an Arizona life science researcher who has made the most significant contribution to the advancement of knowledge and understanding of biological processes. Arntzen was recognized for his contributions to the Ebola drug ZMapp.

Learn more

Dr. Rebecca White, of the T. Denny Sanford School of Social and Family Dynamics, has been named a William T. Grant Scholar. She is one of five early career researchers from across the country who will receive $350,000 to execute rigorous five-year research projects.

Learn more
Future Tense

A partnership among ASU, the New America Foundation and Slate magazine, Future Tense is the citizen's guide to the future, exploring emerging technologies and their transformative impacts on public policy, culture and society. The Future Tense channel on Slate.com has several million monthly readers, and provides an opportunity for ASU researchers from across the spectrum of disciplines to share unique, provocative and unexpected ideas and perspectives with a broad public audience.

Learn more

Project Hieroglyph

Founded by New York Times bestselling author Neal Stephenson and headquartered at ASU's Center for Science and the Imagination, Project Hieroglyph teams up top science fiction authors with scientists, engineers, artists, humanists and other creative thinkers to collaborate on optimistic, ambitious visions of the near future grounded in real science and technology. The project frames cutting-edge research through compelling stories to inspire a broad public audience. The first Hieroglyph anthology, "Hieroglyph: Stories and Visions for a Better Future," was published in September 2014 by HarperCollins. The project also hosts a digital community platform that acts as a hub for ongoing projects, compelling stories and new collaborations.

Learn more

Student jetpack video takes off

An ASU video about a student invention to make soldiers run faster has garnered significant attention, receiving nearly 3 million views so far. Jason Kerestes, a student in the Polytechnic School, partnered with DARPA through ASU's iProjects program to create a wearable jetpack that enhances speed and agility. The project was also featured on the Discovery Channel.

Watch the video

Sustaining our cities

By 2050, 6.4 billion people around the globe will live in urban areas, according to the World Health Organization. How can we design our cities to sustain the environmental, economic and physical well-being of future generations in the face of such rapid growth? Researchers from many disciplines at ASU are conducting research and collaborating with municipalities to solve this challenge. Follow our "Sustainable Cities" series to learn about their contributions in areas like food production, building design, transportation and more. Check back regularly for upcoming articles.

Read the series
**Uniform Guidance**

On December 26, 2013, the Office of Management and Budget (OMB) released 2 CFR Part 200, which combines A-21, A-110 and A-133 with five other circulars to create what is referred to as the Uniform Guidance or Omni-Circular. The effective date is December 26, 2014. Research administration industry organizations, consultants and institutions of higher education have been collaborating on assessing the impact and planning for implementation of required changes. Overall, the impacts will be minimal at ASU with the biggest changes happening in procurement. For more information, visit our Uniform Guidance website or contact Lisa Mosley, 480-727-9754, lisa.mosley@asu.edu

**Help with funding**

Do you have questions about funding tools or opportunities? Need to find info on sponsor agencies? Want to attend proposal writing and training events? funding.asu.edu provides links to funding tools, limited submissions, and philanthropic opportunities along with sponsor information, proposal development tools and training events. Sign up for notifications to receive weekly emails to stay informed of funding news.

**Horizon 2020 workshop**

Explore opportunities under the Horizon 2020 framework at a workshop scheduled for November 21. Learn how U.S. researchers can partner with the European Union scientific community. Funds support a wide variety of topics, including social sciences and humanities, industry partnerships, and energy, among others. Learn more or register

**Enterprise Research Administration (ERA)**

The ERA system is part of a large investment by the Office of Knowledge Enterprise Development to modernize and integrate the systems used for research administration at ASU. ERA Grants was launched in April 2014, ERA IRB was launched in early 2014, and ERA COI was launched in fall 2013. To date, we have submitted over 1,100 applications! We are currently working on some improvements and enhancements to the system. ERA Grants Phase II design phase has started and will include: Post Submission Change Requests, ERA Award Management and Contract Negotiations (including Subawards).

**SciVal Experts**

SciVal Experts (experts.scival.com/asu) can help you form partnerships and demonstrate expertise to the global research community. SciVal Experts is a powerful search engine that can help you identify ASU collaborators with specific areas of expertise based on their publications and grants. The researcher profiles in SciVal Experts are comprised of scientific and technical publications indexed in Elsevier’s Scopus database as well as funded grant information. Learn more about this tool

**Capture management workshops**

OKED will be hosting a “Capture Management Workshop” the first week of January 2015. Capture management is the process undertaken before a solicitation is made available by the sponsor agency. It includes visiting the sponsor, understanding the funding landscape for a sponsor, defining a specific project/program in relation to what the sponsor is prioritizing, identifying team members, and asking relevant questions to assess risks inherent in a proposal or overall opportunity. This workshop will identify best practices for positioning to win, resulting in more competitive proposals. It is appropriate for individual principal investigators, center directors, and senior leaders in schools and colleges looking to strategically improve their research funding portfolio. Register
Furnace brings discoveries from lab to marketplace

The Furnace Technology Transfer Accelerator is a startup accelerator that launches new companies based on technologies and intellectual property from premier research institutions including ASU. Prospective participants must go through a competitive process that includes choosing a technology, forming a management team and submitting a proposal. The selected teams participate in an intensive nine-month accelerator experience that provides seed funding, office space, access to top industry mentors and a culminating Demo Day with investors.

Event to discuss commercialization of faculty IP

Join Charlie Lewis, AzTE’s vice present of venture capital; Mitzi Montoya, ASU’s vice president and university dean for entrepreneurship and innovation; and Louis P. Berneman, founding partner of Osage University Partners (OUP), for a November 14 panel discussion on commercializing university spinouts and investing in innovative startups based on faculty IP. Since launching in 2011, OUP has grown to a $100M fund, investing in diverse sectors that include software, hardware and life sciences. Please contact us if you would like to be added to the guest list for this invitation-only event.

Discounted TechShop memberships

ASU faculty and staff are eligible for discounted memberships to TechShop, a community-based do-it-yourself facility located at the ASU Chandler Innovation Center. TechShop offers access to more than $1 million worth of state-of-the-art equipment, including 3-D printers, laser cutters and a metal press, as well as workshops on how to use the equipment.

ASU Startup Accelerator helps faculty spinouts

ASU offers services for Arizona-based companies, including faculty spinouts, through the ASU Startup Accelerator, a joint venture between OKED and Arizona Technology Enterprises. Companies accepted into the program receive mentorship, training, workspace and more.

ASU Startup School open to faculty and staff

ASU Startup School is a sequence of continuing education modules organized in three stages. Faculty and staff can participate as either attendees or facilitators. Entrepreneur training is offered for current and aspiring entrepreneurs interested in advancing their ideas and developing their ventures, while facilitator training is offered for individuals interested in becoming certified ASU Startup School facilitators.
Nine scientists affiliated with the Institute of Human Origins have been awarded a $4.9 million, three-year grant from the John Templeton Foundation. The grant is the largest of its type for human origins research and will support 11 linked projects to explore the process of “how we became human.”

Dr. Dr. Joshua LaBaer, director of the Biodesign Institute’s Virginia G. Piper Center for Personalized Diagnostics, has been awarded an additional $9 million from the Biomedical Advanced Research and Development Authority (BARDA). The team will continue to advance research to produce a diagnostic test to rapidly measure an individual’s level of absorption of radiation in the event of an unplanned radiological or nuclear event.

Dr. Nancy Gonzales, in the Department of Psychology, was awarded $3.8 million in funding from the National Institutes of Health for research focused on optimizing drug abuse prevention programs.

Dr. Linda Luecken, of the Department of Psychology, was awarded $2.8 million from the National Institutes of Health for the study, "Emerging Regulatory Capacity in Low-income Mexican American Children."

Dr. Stephen Johnston, co-director of the Biodesign Institute, has been awarded $3 million in funding from the Department of Defense to advance research to develop a simple, early detection method for breast cancer.

Dr. Zachary Holman, of the School of Electrical, Computer and Energy Engineering, was awarded over $2.7 million from the Department of Energy’s Office of Advanced Research Programs Agency – Energy (ARPA-E) to develop a solar concentrator mirror incorporating photovoltaic cells.

Dr. Ray Daniels, executive director of the Biodesign Institute, was awarded $1.7 million from the National Institutes of Health to study the role of eicosanoids in intestinal biology.

Dr. Janet Neisewander, of the School of Life Sciences, was awarded over $1.7 million in funding from the National Institutes of Health to advance drug addiction research in a project titled “Neural Mechanisms of Drug Seeking.”

Dr. Thomas Seager, of the School of Sustainable Engineering and the Built Environment, was awarded $1.9 million from the National Science Foundation to study “Resilience Simulation for Water, Power and Road Networks.”

LightWorks has finalized a $1.5 million funding agreement with AORA Solar to build a concentrated solar thermal power plant on the Tempe campus and to conduct associated renewable energy research.

Dr. Hallie Eakin, of the School of Sustainability, was awarded $1.5 million from the National Science Foundation to study “The Dynamics of Multi-Scalar Adaptation in Megacities.”

Dr. Charles Perrings, of the School of Life Sciences, was awarded $1.45 million from the National Science Foundation for a U.S.-United Kingdom collaboration titled, “Risks of Animal and Plant Infectious Diseases through Trade.”

Dr. Mark Woodward, of the Center for the Study of Religion and Conflict and the College of Liberal Arts and Sciences, has been awarded $850,000 from the Department of Defense to advance a research project titled “Emerging Trends in Muslim Discourse: The Rise of Religious Intolerance Sectarianism and Shariah Consciousness.”

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